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MEETING SUMMARY
SOUTH CAROLINA CLIMATE, ENERGY AND COMMERCE ADVISORY
COMMITTEE

Energy Supply (ES) Technical Work Group (TWG)

Teleconference meeting #9, January 25, 2008 from 3:30 PM to 5:00 PM

Attendance:

1. Technical Work Group Members:

- Joan Bozzone – Physical Scientist, National Nuclear Security Administration
- Lonnie Carter – President and CEO, Santee Cooper (with Mark Tye filling in for part of meeting)
- John Clark – Director, South Carolina Energy Office
- Bob Fledderman – Manager, Environment and Regulatory Assurance, MeadWestvaco
- Emerson Gower – Vice President, Southern Region, Progress Energy Carolinas
- Fred Humes – Chairman of the Board of Directors of the South Carolina Hydrogen and Fuel Cell Alliance
- Henry Barton (for Kevin Marsh – President, South Carolina Electric & Gas)
- David Odell – President, Sunstore Solar of Greenville, South Carolina
- Chuck Claunch (for James E. Rogers – Chairman, President and CEO, Duke Energy Corporation)
- C. Dukes Scott – Executive Director, Office of Regulatory Staff

2. Center for Climate Strategies (CCS) Staff:

- Ezra Hausman – Lead facilitator
- Alice Napoleon
- Kenji Takahashi
- Tom Peterson

3. South Carolina Department of Health and Environmental Control (DHEC):

- Michael Juras – SCDHEC; Agency Liaison

4. South Carolina Agency Observers

- Anthony James - South Carolina Office of Regulatory Staff

5. Public Attendees:

- Mike Kennedy – Progress Energy Carolinas
- Janelle McCain – Progress Energy Carolinas

6. Technical Work Group Members not attending:

- Robert Boyles – Deputy Director, Marine Resources Division, Department of Natural Resources
- Jerry Freck – Environmental Engineer, South Carolina Department of Health and Environmental Control
- Jeff Hinson – Utilities Manager, Clemson University
- Mark Lewis – Vice President, Westinghouse Electric
- Ben Moore – Coastal Conservation League
- John Plodinec – Savannah River National Lab
- Nick Rigas – Director, South Carolina Institute for Energy Studies
- Steve Smith – Executive Director, Southern Alliance for Clean Energy
- Coleman Smoak – General Manager, Piedmont Power
- Joette G. Sonnenberg – Associate Laboratory Director, Energy Security, Savannah River National Laboratory
- John Tiencken – Former CEO, Santee Cooper

Background documents:

Posted at http://www.scclimatechange.us/Energy_Supply.cfm:

1. Meeting Notice and Agenda
2. Final Summary of Meeting #8
3. PowerPoint for Teleconference
4. Policy Option Document
5. Proposed Revisions to GHG Inventory & Forecast

Discussion items and key issues:

This was the 9th meeting of the ES TWG.

1. CCS called the meeting to order, completed the roll call and reviewed the agenda and plans for the call.
2. Draft meeting summary
 - a. Change “In-person” to “teleconference”
 - b. Change “Information needed from utilities on avoidable costs – no response given when asked during call” to “Information needed from utilities on avoidable costs – data to be solicited by email.”
 - c. Mark Tye said there were changes to ES-1 that were agreed to during the last meeting but were not made in the policy option document. Option 2 & 4 were combined into single one, and “75% must be met with renewable energy or energy efficiency” was removed from Option 2. Ezra responded that the TWG should discuss this today, but that he does not know how to proceed with an analysis of ES-1 without percent targets.
 - d. No objections subject to these changes
3. Ezra described the goal for the meeting. The 1st order of business is to finish working out the more detailed structure of certain policies are, so that we can use those details in the analysis. Also, the TWG needs to agree on certain key assumptions so that CCS can

move forward with the analysis and present results at the next TWG meeting, and then to CECAC on Feb. 22. The CECAC can modify the policies at that point. (TWG members can and should provide feedback on February 14 but there will be no time to revise the analysis prior to posting for the CECAC meeting. TWG comments will be presented.) Although it is on the agenda, the issues with the inventory and forecast must be deferred until the February 14 meeting due to these other, more pressing matters.

4. Policies that need more definition to be analyzed were discussed first.

a. ES-1

- i. Ezra proposed that the analysis start with a definition of energy efficiency, renewable energy, and nuclear energy individually, and then look at these as a portfolio. Tom Peterson asked if a supply curve for individual components has been discussed. Ezra responded that it is not easy to combine the other resources into one because of the operating characteristics, but the GDS/La Capra study gives us the ability to do that for renewables.
- ii. Lonnie Carter suggested looking into the potential for the different resources. Why is there a need for a minimum standard for renewables? Kenji Takahashi noted that potential is taken into account as a ceiling in analysis. The policy can be defined by price or portfolio shares. Is the TWG is trying to get only resources below market price? If price is the defining characteristic, what would it be—avoided cost?
- iii. Ezra noted that CCS doesn't have same data for nuclear energy and energy efficiency as for renewable energy resources.
- iv. Kenji further explained that typically, RPS potential studies are done for renewable energy resources because they are not cost effective on their own. Energy efficiency, on the other hand, is much more cost effective at 3¢/kwh saved.
- v. Lonnie thought it would be helpful to have potential & costs compiled into a supply curve, compared with projected demand growth.
- vi. John Clark noted that the LaCapra study is pretty good, but we don't want to get locked into it specifically. Kenji noted that the LaCapra/GDS study didn't investigate offshore wind potential. NREL does estimate offshore technical potential at 50,000 MW. John will forward another source on offshore potential (technical, not practical potential) to Ezra. Ezra will make sure that the LaCapra study is posted. CCS will assume a reasonable practical potential for offshore wind, drawing on installation sizes proposed in other states; otherwise, CCS will use the GDS/LaCapra study as the source of cost and practical potential for analysis purposes but will note that all were taken from one limited study.

b. ES-4

- i. Ezra added a few lines at the bottom of the policy design about the components of a cost recovery model; these may be wrong. No feedback on this language was provided.
- ii. Before the meeting, Ezra distributed the EPA report “Aligning Utility Incentives with Investment in Energy Efficiency”. The report breaks down three types of policy options that can ways that be used to address the effect of energy efficiency on utilities’ financial position:
 - Program cost recovery
 - Recovery of lost revenues
 - Performance incentive

Ezra explained that a policy focused on recovery of lost revenues would try to make sure that the fixed cost portion of the revenue requirement is recovered.

In the EPA study, a performance incentive can be structured as a portion of avoidable cost, or it can be tied to the return on equity that the utility would make in absence of the energy efficiency program. Chuck Claunch of Duke noted that the latter approach is being considered in SC currently.

- iii. Ezra asked for TWG feedback on how ES-4 would be structured. Bob Fledderman asked if the utility doesn’t build a plant, what fixed costs are there to recover? Alice Napoleon noted that the CECAC decided to move this policy forward, and it included these three elements, so whatever policy the TWG comes up with should address those three elements.
- iv. Ezra clarified that the policy is not specifically modeled on Duke’s Save a Watt proposal. The TWG asked what the alternative is, and in absence of a specific proposal, the policy should be based on Save a Watt. Ezra asked Chuck whether putting forth a quick analysis for this process will be objectionable to Duke; Chuck indicated that “core” TWG members should decide. There were no objections to modeling the analysis roughly on the Duke Save a Watt proposal.

c. ES-5

- i. Ezra noted that the TWG had already discussed some of the issues for ES-5 under ES-1.
- ii. The National Academy of Sciences report was recommended as the best source; there were no objections to using this report as the primary resource for cost and feasibility analysis for the reprocessing aspect this policy.

5. Memo on assumptions

- a. Ezra distributed a memo on general ES assumptions to the TWG immediately prior to the call. Some members were unable to access the memo during the TWG call. Ezra noted that people can review the memo later and give feedback to him

by email. CCS will use what we have at the end of day, but these assumptions can be changed.

- b. Renewable energy cost
 - i. CCS would use the average renewable energy installed cost for its analysis.
 - ii. John Clark requested that data be presented in a levelized, all-in cost per MWh. CCS will provide these data to the TWG; levelized costs will also be used in the supply curve.
- c. Renewable energy potential table: no comments.
- d. Costs associated with energy efficiency:
 - i. The study by Frontier Economics for Duke finds a 3¢/kwh all-in, levelized cost of saved electricity. This would include cost recovery but would not include lost revenue or performance incentives.
 - ii. What is the assumed quantity of energy efficiency? Kenji said it depends on how much the utility is willing to spend. In RCI, the amount of efficiency is constrained by the goal ramp-in, reflecting perceived constraints on what can feasibly be done in the short run. Based on experience in other states, the limit may be closer to 1.5%-2% per year. John Clark noted that 1700 MW of avoided capacity is the potential associated with this cost parameter (3¢). CCS will add Forefront to the supply curve to be provided to the TWG.
- e. Nuclear costs: Ezra noted that it's difficult to find an unbiased source for new nuclear plant costs, but Moody's is probably the least biased. Moody's all-in cost of \$5000-6000/KW is probably higher than some utility estimates. CCS will calculate and report levelized costs to TWG. There were no objections to using Moody's as an unbiased source.
- f. Avoided Energy – from Duke Energy's filing with the NC PUC
 - i. Ezra described CCS's approach: In general, nuclear power would displace coal.
 - ii. Energy efficiency and renewable energy would displace gas & coal based on Duke's avoided cost filing for NC. The displaced gas results in less of an avoided carbon benefit. John Clark noted that there is less gas used in SC than in NC, and that hydro won't be displaced. Also, biomass might avoid coal generation. CCS will get data specific to SC. Jeanelle McCain agreed to provide Progress's Avoided Cost filing to the SC PSC.
 - iii. Avoided energy will be considered on an energy basis.
 - iv. There were no objections to John Clark's suggested approach of weighting by actual energy

6. I&F

- a. There was a question about T&D line losses. Ezra responded that the analysis draws on T&D losses for the SERC region, 8.8% in 2003. He proposed losses based on the NC analysis, 5-6%.
 - b. Ezra noted that CCS still has work to do on what new resources will look like. (the person who developed this section of the inventory and forecast, Bill Dougherty, has been tied up in the Minnesota process.)
7. CCS solicited input from the public. No comments or questions were raised.

Next steps and agreements:

8. At its next meeting, the TWG will review the results of the quantitative analysis, work on other areas of policy template, and conclude its discussion of the generation mix forecast for the inventory and forecast. This meeting (#10) is scheduled to be held by phone Thursday, February 14, 3:30 – 5:00 PM, but Ezra recommended a change to 2:30 – 5:00 PM (same date). There were no objections to extended the meeting to 2.5 hours.
9. At its next meeting on February 22, the CECAC will review the initial analysis results.